

Claims

1. The use
5 (i) of an alkaline medium,
(ii) of a first gel which comprises gelatin and
phosphate ions, and
(iiia) of a second gel which is free of phosphate
ions, the first layer of gel being covered
10 with this second gel and/or
(iiib) of a medium containing calcium ions,
for the production of a composition for the growth
of apatite or/and dentine on tooth material.
- 15 2. The use as claimed in claim 1,
c h a r a c t e r i z e d i n t h a t
the alkaline medium employed is an alkaline
solution or an alkaline gel.
- 20 3. The use as claimed in claim 1 or 2,
c h a r a c t e r i z e d i n t h a t
the alkaline medium has a pH of 7.1 to 14, in
particular of 7.5 to 10, and preferably of 8 to 9.
- 25 4. The use as claimed in one of the preceding claims,
c h a r a c t e r i z e d i n t h a t
the alkaline medium employed is 0.05 to 1N NaOH.
- 30 5. The use as claimed in one of the preceding claims,
c h a r a c t e r i z e d i n t h a t
the alkaline medium furthermore contains calcium
ions.
- 35 6. The use as claimed in one of the preceding claims,
c h a r a c t e r i z e d i n t h a t
the first gel employed is a gelatin-glycerol gel.
7. The use as claimed in one of the preceding claims,

c h a r a c t e r i z e d i n t h a t
the first gel furthermore contains fluoride ions.

- 5 8. The use as claimed in one of the preceding claims,
c h a r a c t e r i z e d i n t h a t
the first gel has a pH of 2.0 to 6.0.
- 10 9. The use as claimed in one of the preceding claims,
c h a r a c t e r i z e d i n t h a t
the first gel further comprises at least one
calcium phosphate compound.
- 15 10. The use as claimed in claim 9,
c h a r a c t e r i z e d i n t h a t
the first gel further comprises a calcium
phosphate compound selected from fluoroapatite,
monetite, brushite, amorphous calcium phosphate
and hydroxylapatite.
- 20 11. The use as claimed in claim 9 or 10,
c h a r a c t e r i z e d i n t h a t
the first gel further comprises fluoroapatite
particles, especially spherical fluoroapatite
particles.
- 25 12. The use as claimed in one of claims 9 to 11,
c h a r a c t e r i z e d i n t h a t
the first gel contains 5 to 30% by weight of
calcium phosphate compounds, especially of
30 fluoroapatite.
- 35 13. The use as claimed in one of claims 9 to 12,
c h a r a c t e r i z e d i n t h a t
the first gel contains spherical particles of
calcium phosphate compounds, especially spherical
particles of fluoroapatite.
14. The use as claimed in one of claims 9 to 13,

c h a r a c t e r i z e d i n t h a t
the calcium phosphate compound are used as
particles having an average size of 5 to 50 μ m, in
particular of 10 to 20 μ m.

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15. The use as claimed in one of the preceding claims,
c h a r a c t e r i z e d i n t h a t
the second gel is free of fluoride ions.

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16. The use as claimed in one of the preceding claims,
c h a r a c t e r i z e d i n t h a t
the second gel is selected from gelatin-glycerol
gels, polysaccharide gels or carboxymethyl-
cellulose gels.

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17. The use as claimed in one of the preceding claims,
c h a r a c t e r i z e d i n t h a t
the medium containing calcium ions employed is a
solution containing calcium ions or a gel
containing calcium ions.

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18. The use as claimed in claim 18,
c h a r a c t e r i z e d i n t h a t
no second gel (iiia) is employed in the case of
the use of a gel containing calcium ions.

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19. The use as claimed in one of the preceding claims,
c h a r a c t e r i z e d i n t h a t
the medium containing calcium ions has a pH of 6
to 8.

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20. The use as claimed in one of the preceding claims,
c h a r a c t e r i z e d i n t h a t
the tooth material is defatted, slightly etched
or/and rinsed before the application of the
alkaline medium or/and before the application of
the first gel.

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21. The use as claimed in one of the preceding claims,
c h a r a c t e r i z e d i n t h a t
the tooth material is human teeth or/and tooth
enamel.
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22. The use as claimed in one of the preceding claims,
c h a r a c t e r i z e d i n t h a t
the components (i), (ii) and (iiia) or/and (iiib)
are intended for the treatment of carious defects
by remineralization.
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23. The use as claimed in one of the preceding claims,
c h a r a c t e r i z e d i n t h a t
the tooth material is covered with a dentine layer
or/and a protective apatite layer.
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24. A composition, in particular for use as claimed in
one of claims 1 to 12, comprising
a) an alkaline medium,
b) a first gel which comprises gelatin and
phosphate ions, and
c1) a second gel which is free of phosphate ions,
or/and
c2) a medium containing calcium ions.
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25. A kit, in particular for use as claimed in one of
claims 1 to 12, comprising
a) an alkaline medium,
b) a first gel which comprises gelatin and
phosphate ions,
c1) a second gel which is free of phosphate ions,
or/and
c2) a medium containing calcium ions.
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- 35 26. The composition as claimed in claim 24 or the kit
as claimed in claim 25,
c h a r a c t e r i z e d i n t h a t
the components a), b) or/and c1) or c2) are

furthermore defined as in one of claims 2 to 19.

27. A process for the growth of apatite on tooth material, comprising the steps
- 5 (i) application of an alkaline medium,
(ii) application of a first gel which comprises gelatin and phosphate ions, and
(iiia) application of a second gel, the first layer of gel being covered with this second
10 gel and/or
(iiib) application of a medium containing calcium ions,
a building up of apatite on the surface of the tooth material being caused.
- 15 28. The use
(i) of a first gel which comprises gelatin and phosphate ions, and
(iia) of a second gel which is free of phosphate
20 ions, the first gel layer being covered with this second gel and/or
(iib) of a medium containing calcium ions,
for the production of a composition for the growth of apatite or/and dentine on tooth material, the
25 first gel furthermore containing at least one calcium phosphate compound.